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ABSTRACT

A two-phase study using the Delphi Technique examined the future of occupational education in central New York. The study surveyed three groups having some degree of relationship to occupational education: beneficiary groups (employers), policy making and/or influencing groups, and advisory/informational groups. The survey instrument included 134 events that could have some effect on occupational education and was designed to determine the probability of the event occurring, time frame, and its impact on education. Of the 134 events identified, 128 were estimated to occur probably by the year 2000. Five events were thought to occur by 1980. Twenty-four events were identified as having a strong positive impact on occupational education and fourteen events were forecasted to have a probable negative impact on occupational education. (Appended material includes a list of the 134 events with findings and the questionnaires.) (LRA)

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Future Events Impacting Occupational Education: A Report on the OCTOC Delphi Study Volume I

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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MARCH 19, 1979

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INTRODUCTION

The primary purpose of this study was to assist the members of the OCTOC Executive Committee in revising the long-range plans for occupational education for New York State's Occupational Education Planning Region #9. The OCTOC Executive Committee is composed of the chief executive officers of the five BOCES, three community colleges, and the Syracuse City School District.

The first long-range plan was formulated in 1976, using a planning process prevalent to most educational planning. It could have been termed "the-future-as-an-extrapolation-of-the-present."[3] Its major premise was that the future would not be much different from the present. The process itself was characterized by an emphasis on the extrapolation of quantitative variables which were descriptive of the then current state of the occupational education system existing in Central New York.

In summary, the process used to develop the first five-year plan resulted in a single view of the future of occupational education, and did not make provisions for an examination of possible alternative futures, nor take into account the non-educational variables which could have future effect on occupational education in the region.

Recognizing the major limitation in the planning process initially used, the region's planner-facilitator team was requested to incorporate planning techniques more conducive to a normative planning model. It was further decided that the planner-facilitators would undertake a study of the future of occupational education in Central New York, utilizing techniques falling under the rubric of "future casting." The final product of this study was intended to be a series of alternative futures and their implications for occupational education. More specifically, the objectives set for the "future casting" study were:

a. To identify probable future events which would affect occupational education in general and/or in the Central New York region. These events were to be from the following broad categories:
    1. Technical
    2. Economic
    3. Demographic
    4. Attitudinal/Valuation
    5. Education
    6. Political

b. To assess the probable impact that such events would possibly have on occupational education in the Central New York region

c. To identify those policy decisions which such events would necessitate being made by the agencies comprising the OCTOC planning consortium

d. To obtain input into the OCTOC region's planning process from persons outside of the region's occupational education system, but who might have knowledge of future events affecting that system.

It was decided by the planner-facilitators that to accomplish these objectives, three techniques of "future casting" would be used: Delphi survey, cross-impact analysis, and scenario generation. These techniques allowed the team to:

a. Elicit and refine the opinions of the participants in the study, as to probable future events impacting occupational education

b. Assess the interrelationships between these events

c. Construct a logical sequence of events describing a probable future state with which occupational education might have to contend.

This report describes the results of that phase of the study within which the Delphi technique was applied. It was the first phase of the study, and its product was a series of statements describing probable future events, which were seen as having possible impact on occupational education.

METHODOLOGY

SELECTION OF THE SAMPLE POPULATION

A conceptual model similar to that developed by Marien [1] was used to identify relevant groups having knowledge regarding probable future events that could impact the nature and direction of occupational education. These groups, having some degree of relationship to occupational education, were:

1. Beneficiary: Those categories of employers in the region who commonly hire the graduates of occupational preparation programs. Seven subdivisions of employers analogous to the seven occupational preparational program categories were chosen: manufacturing, business, health, public service, agricultural, social service, and construction.
2. Policy-making and/or influencing groups: Those who hold political office, either through election or appointment, and those in public agencies that make policy recommendations relevant to education (e.g., State Education Department, legislative bodies, planning commissions, etc.).
3. Advisory/Informational: Those members of governmental agencies that regularly develop and/or supply information on labor market and economic conditions (e.g., Labor Department, CETA, chambers of commerce, etc.).

To identify specific individuals within each of these groups, a reputational procedure was employed. Each of the executive officers, along with the planner-facilitator team, suggested the names of five persons from his local area in each of the categories listed above as possible participants in the study. The persons whose names were suggested were individuals, who by reputation, were considered forward looking leaders in their field and/or who were knowledgeable of the most current developments and advancements in their respective area of expertise.

In total, two hundred and four (204) persons were identified who comprised the survey sample. Of these, ninety-nine (99) participated in the study. Table I shows the number of participants in each group, initially selected, and responding to the survey.

TABLE I

NUMBER OF PARTICIPANTS BY GROUP

GROUP	PARTICIPANTS	
	SELECTED	RESPONDING
Beneficiary	144	67
Policy-making	29	15
Advisory-Informational	31	17
TOTAL	204	99

PROCEDURE

1. Round I

The entire two hundred and four (204) participants identified were sent the questionnaire for the first round of the Delphi. It was designed to elicit from each respondent eight (8) events that he or she considered as plausible occurrences in the next twenty years, and could have some impact on occupational education. The instructions contained illustrations of possible categories of events and requested participants to list their suggested events on a response form. In addition, respondents were asked to select two (2) events from the eight (8) identified, which, in their opinion, would, if they were to occur, have the greatest impact on occupational and technical education in Central New York.

Once returned, the events of the respondents were collated by the planning group for similarity. From the collated events, the planner-facilitators then chose one hundred and thirty four (134) events for Round II and III questions, on the basis of three criteria:

a. Frequency of occurrence among respondents

b. Potential impact on education in general, and occupational/technical education in particular

c. Imaginative and/or "interestingness."

Of the one hundred and thirty four (134) events, twenty five (25) events were identified with sufficient frequency by all the respondents from the three major groups, so as to be included on the Round II and III questionnaires for all groups. These events are identified on the list provided in Appendix A by an asterisk (*).

The events, once chosen, were then edited and rewritten. Using a technique developed by Sandow, each event was written as a future news event.[2] Such a format eliminated any ambiguity in wording and increased the specificity of the event.

2. Round II

The second round of the Delphi requested respondents to provide three pieces of information for each event (see Appendix B). These were:

a. Probability: The estimate of how likely the event is to occur using the following symbols:

A - almost certain to occur, 90% chance or greater

H - high probability of occurrence, 60 to 89%

E - an even chance of occurring or not occurring, 40 to 59%

L - low probability of occurrence, 10 to 39%

N - almost no likelihood of occurrence, 10% chance or less

b. Time Frame: The estimated time the event was most likely to occur by using five year intervals (i.e., 1980, 1985, 1990, etc.).

c. Impact on Education: The effect of the event on education, using the following scale:

+3 - a very strong, positive impact

+2 - a strong, positive impact

+1 - a mildly, positive impact

0 - no impact, either negative or positive

-1 - a mildly, negative impact

-2 - a strong, negative impact

-3 - a very strong, negative impact

The completed questionnaires were analyzed by a planner-facilitator team member and a mean response was then calculated for each event as to its:

a. probability of occurrence

b. probable time of occurrence

c. impact on occupational/technical education.

These group means were then printed, for each event, on the Round III questionnaire, along with the Round II response, of each participant.

3. Round III

On Round III, each respondent was asked to first compare, for each event, their respective group's estimate, with their own individual estimate, as to the likelihood, time, and impact. Upon completion of this task, they were then directed to reassess each event and change their estimate for each event, if they felt their previous estimates were

inaccurate (see Appendix C). These revised estimates were then collated and the means were calculated for each event, as to a probable likelihood, time of occurrence, and potential impact. These final estimates are displayed for each event in Appendix A.

RESULTS

The events forecasted by the Delphi survey are displayed in Table II and Table III of this report. The first table shows the group's mean estimates for each event, as to that event's likelihood and date of occurrence, while the second table displays the mean estimates of the groups for an event's date of occurrence and impact on education. Each event is identified on the table by a descriptor consisting of a letter and number (e.g., P-15, D-06, etc.). The letter indicates the category to which the event was assigned by the planning-facilitator team (e.g., P = Political, T = Technical, etc.).

Of the one hundred and thirty four (134) events identified, one hundred and twenty eight (128) were estimated to probably occur by the year 2000, and the remaining six (6) beyond the year 2000. Five (5) events were thought to occur by 1980. These were events P-15, P-20, U-12, A-25, and L-16 (Appendix A contains the events).

Twenty nine (29) events were estimated to have either almost a certain (90% or better), or high (60 to 89%) probability of occurring. These events are listed below:

HIGHLY PROBABLE EVENTS OCCURRING BY 1980

A-04	B-04	E-30	L-44	T-35
A-21	D-06	H-24	N-37	T-41
A-25	D-30	L-33	P-15	T-46
A-26	E-12	L-36	P-20	U-12
A-28	E-18	L-37	T-22	U-17
A-29	E-28	L-43	T-28	

There were no events identified by the respondents as having either a very strong, positive (+3), or a very strong, negative (-3), impact on education. Twenty four (24) events were identified, however, as having a strong, positive (+2) impact on occupational education. Nine (9) of these events were also estimated to have an almost certain, or high probability of occurring before 1990. They were: P-15, H-24, A-29, H-29, E-28, L-33, L-36, L-44, T-41.

Listed below are the fourteen (14) events forecasted to have a probable negative impact on education:

C-21	E-23	L-26
D-13	E-42	L-40
E-06	E-44	U-29
E-08	E-57	V-21
E-21	L-24	

Eleven (11) of them were estimated to have a sixty percent (60%) to better than ninety percent (90%) probability of occurring before 1990. Four (4) of them (E-06, E-08, E-57, and V-21) were estimated as having a strong negative (-2) impact upon education.

Forty three (43) events out of the total number of one hundred and thirty eight (138) were estimated by the respondents to have no impact on education should they occur.

The remaining portions of this study, the generation of scenarios can be found in report II.

REFERENCES

1. Marien, Michael. "Macro-System Forecasting: Some Preliminary Comments," Notes on the Future of Education. Syracuse: Educational Policy Research Center, Syracuse University Research Corporation, Summer, 1970. pg. 2-6

2. Sandow, Stuart A. "The Constraints of Language on Our Views of the Futures: Experiments with Legal Issues in Education." In Michael Marien and Warren L. Ziegler (ed.) The Potential of Educational Futures. Worthington, Ohio: Charles A. Jones, 1972 pg. 47-53

3. Ziegler, Warren L. An Approach to the Futures - Perspective in American Education. Syracuse: Educational Policy Research Center, Syracuse University Research Corporation, May 1970.

Appendix A

List of Events

List of Events

AGRICULTURE

A-04. The number of New York State farmers using "off-farm" services, such as spraying, fertilizer spreading, etc., has increased by almost twenty-five percent (25%) over 1977.
(H - 1985 - +1)

A-21. The number of farms in Central New York has declined by thirty-three percent (33%) since 1977.
(H - 1990 - +1)

A-23. A recent consumer research report stated that public concern over cholesterol intake has created an increased demand for poultry.
(E - 1990 - 0)

A-24. Public concern over radioactive fallout has caused decreased demand for dairy products, the New York Farmers Association reported.
(N - 2000+ - +1)

A-25. As urbanization continues, land and soil management has become more and more important. The metropolitan sprawl and the related demand for highways has required the farmer to spend a much larger portion of his/her income on property taxes.
(H - 1980 - +1)

A-26. More intensive soil conservation methods and improved seed and fertilizers, which allow the farmer to produce more per animal, per acre, per unit, are being widely demonstrated by Agriculture Extension Agents.
(A - 1985 - +2)

A-27. The State Agriculture Department has announced that ten percent (10%) of all farms in Central New York use hydrophonic greenhouses.
(L - 2000+ - +1)

A-28. The United States Agriculture Department recently announced that the increase in the number of larger and more mechanized farm businesses has increased the demand for highly skilled machine operators and farm workers.
(A - 1985 - +1)

A-29. Concentrated production areas using advanced technologies require fewer farm employees, while those employed have very specialized training and skills in chemistry, business management, equipment maintenance technology and ecology.
(H - 1990 - +2)

LIST OF EVENTS

AGRICULTURE (con't)

A-32. The Farm Managers Association of New York State has stated that the use of task analysis and other management techniques has brought about the following uses of person power on farms:

a. Women now make up the majority of the workforce employed to do milking at the larger dairies.

(H - 1990 - 0)

A-33. Only youth who have graduated from certified training programs that meet strict regulations are able to work on farms.
(L - 1995 - +1)

A-34. Migrant workers have been trained to do high level skilled operations on northern farms during normally slack times on southern farms.
(L - 2000+ - +1)

A-36. Foreign countries have developed their agri-business to the point that they can produce enough for their own needs, thereby requiring more land to be taken out of production in this country.
(L - 2000 - 0)

A-40. The increased technical skills of agricultural employees has resulted in the state government requiring certification of certain types of farm workers.
E - 1990 - +1)

A-42. United States agricultural policies and research have brought about stability in the supply and demand for food products.
(E - 1995 - +1)

BUSINESS

B-04. Most retail purchases in Central New York are credit transactions due to direct lines to area banks which allow almost immediate determination of the buyer's credit rating.
(H - 1990 - +1)

B-11. Conrail announces its third consecutive year of profits due to an increased volume of traffic through its system, both freight and passenger.
(L - 2000 - 0)

B-13. Almost fifty percent (50%) of the discount retailing stores in the greater Syracuse area are closed due to the increased import regulations.
(L - 1995 - 0)

LIST OF EVENTS

BUSINESS (con't)

B-25. The number of restaurants and quick-food businesses has increased by over fifty percent (50%) in Upstate New York since 1977.
(E - 1990 - 0)

B-41. United States Business News reported that a major trend is occurring in the agri-business. Farmers are banding together into cooperative-like (intensified vertical integration) business operations from production to marketing.
(E - 1990 - +1)

CONSTRUCTION

C-14. Because the continued ncrease in the cost of development has resulted in decreases in the value of land within the region, the Central New York Board of Realtors projected a f fteen percent (15%) increase of land sales over the 1972 level.
(L - 1995 - 0)

C-21. A spokesman for the New York State Builders Association announced that although the level of construction has increased over that of 1975, the number of persons employed in the construction trades has declined by twenty-five percent (25%) over its 1970 level.
(E - 1995 - -1)

C-22. An OSHA report to the President indicates that the use of robot type construction equipment to perform the more hazardous construction tasks has reduced the number of construction accidents by over thirty percent (30%) since 1975.
(L - 2000 - +1)

C-23. The Central New York Building and Construction Board reports that the number of buildings thirty (30) years old or more which have been renovated and reused has increased by over forty percent (40%) since 1977.
(E - 1985 - +1)

C-25. The first multi-storied building using the Dupont Company's new "super strength" plastic girders for its structural frame has been erected in midtown Manhattan.
(E - 1995 - +1)

C-26. The Syracuse Herald-American's annual Economic Review of Central New York carried an article which states that over two-thirds of all new residential housing begun last year used factory assembled building modules in their construction.
(L - 1995 - 0)

LIST OF EVENTS

CONSTRUCTION (con't)

C-27. The Central New York Council of County Planning Boards project that the number of condominium and multifamily cooperatives begun within the next year will be double that of 1977.
(E - 1990 - 0)

DEMOGRAPHIC

D-06. The Central New York morning paper's feature article describes a major reversal of the exodus trend of the 1960's and 1970's with major industries and commercial firms relocating in the cities, greatly expediting the rebuilding and renewal of urban areas.
(H - 1990 - +1)

D-09. Unlike other areas of the State and northeastern United States, the in-migration into Central New York has increased by almost twenty percent (20%) since 1975.
(L - 1995 - +1)

D-13. At a recent United States Senate hearing on the economic plight of state and local government, a member of the Office of the Budget and Management conceded that primarily because of the national shifts in population to the South and Southwest, a state such as New Mexico received almost twenty percent (20%) more federal aid than did a northeastern state like New York.
(L - 2000 - -1)

*D-17. The United States Census Bureau announced that the over sixty (60) year old segment makes up almost one-quarter of the total population with almost ninety percent (90%) of them receiving Social Security benefits.
(H - 2000 - 0)

D-25. With advancing life expectancy (now nearly 85 years) and the removal of manditory retirement provisions in all employee-employer contracts, the Census Bureau reports that more than fifty percent (50%) of the people over age sixty (60) are now working in a completely different occupational area than they did before sixty (60).
(E - 200 - +2)

D-29. Unlike other areas of the state and northeastern United States, the population immigrating into Central New York has increased because of the attraction of an adequate water supply, plentiful building sites, available power, the natural beauty of the terrain, and a well-developed transportation network.
(H - 1995 - +2)

LIST OF EVENTS

DEMOGRAPHY (con't)

D-30. The United States Census Bureau has announced that there are now twenty-five percent (25%) fewer farms than in 1978, although the average size of the farm has almost doubled.
(H - 1990 - +1)

ECONOMIC

*E-06. The number of jobs in New York State has declined by approximately fifteen percent (15%) from the level of 1972.
(H - 1990 - -2)

*E-07. A recent New York State's Department of Labor study found that slightly over fifty percent (50%) of all employed persons residing in the State work approximately thirty (30) hours per week.
(H - 1995 - +1)

*E-08. The New York State Commissioner of Commerce announced that capital investment by business and industries located in New York State has dropped by forty percent (40%) from the level of 1970.
(E - 1990 - -2)

*E-12. At a recent public ceremony in Albany, the Governor of New York State officially opened New York State's Employment Service state-wide computerized job bank.
(A - 1990 - 0)

*E-13. A recent report by the New York State Employment Service indicates that the average hourly wage of residents of New York State is $15.00 per hour (in 1977 dollars).
(H - 1990 - 0)

*E-14. An official of the Social Security Administration announced that it currently does not have sufficient funds to meet its obligations to those receiving Social Security payments and therefore, it is immediately suspending all benefit payments until a detailed study and recommendation has been made.
(L - 2000 - 0)

*E-15. The preface to the current Dictionary of Occupational Titles contains the statement that almost thirty percent (30%) of all job titles currently listed in the publication are new and/or emerging occupations since the last date of publication.
(E - 1995 - +2)

LIST OF EVENTS

ECONOMIC (con't)

E-18. The public service sector of occupational employment has grown to the point where it is now considered a "major industry." Many two and four year colleges now have career programs or "majors" in public service.
(H - 1985 - +1)

*E-19. The United States Department of Labor's Statistical Report indicates that only five percent (5%) of the nation's labor force is employed in the production of material goods.
(L - 2000+ - +1)

E-21. A recent New York Times article reported that the cost of medical education has become extremely expensive due to the technical level required of graduates and the continued expansion of the technical equipment needed in the preparation programs.
(H - 1985 - -1)

E-22. The number of persons employed as operatives in such skilled industrial jobs as machinists has declined from fourteen percent (14%) of the labor force in 1972 to the present level of approximately four percent (4%).
(E - 2000 - 0)

E-23. Of the "big five" cities in New York State, only the city of Rochester has not lost all financial borrowing power.
(E - 1995 - -1)

E-24. The United States Department of Labor has begun to implement the amendments recently passed by the United States Congress to the Comprehensive Manpower and Full-Employment Act which calls for income maintenance for persons (primarily women) who are full-time homemakers (See number 9).
(E - 1995 - 0)

E-26. The Syracuse office of the Department of Labor in its latest bulletin has reported that the average work week for most salaried and hourly employees is twenty-five (25) hours per week.
(L - 1990 - +1)

*E-28. The New York State Board of Regents issued a position paper jointly with New York State's Department of Labor and Department of Commerce which identifies "economic re-development" of New York State as the priority objective of occupational/technical education at all levels of the state's system of secondary and post-secondary education.
(H - 1985 - +2)

LIST OF EVENTS

ECONOMIC (con't)

*E-29. Representatives from six northeastern states (i.e., New York, New Jersey, Pennsylvania, Connecticut, Massachusetts, and Rhode Island) jointly established an agency called NEEDS (Northeastern Economic Development Secretariat) to better coordinate the economic development activities within the region.
(E - 1990 - +1)

*E-30. A study committee of economists find that since 1978, heavy manufacturing has declined in five northeastern states (i.e., New York, New Jersey, Pennsylvania, Delaware, Massachusetts), while light manufacturing, commercial, service industries, and research/development activities have increased in economic importance within the region.
(H - 1990 - +1)

E-31. The New York State Employment Service indicated that the long term trend in unemployment increases continues unabated. In Central New York, the unemployment rate has remained above ten percent (10%) for over a year.
(E - 1985 - 0)

E-34. The number of assembly and manufacturing facilities located in New York State owned by foreign corporations account for slightly over thirteen percent (13%) of all such facilities in the state.
(E - 1990 - 0)

E-36. The Labor Department stated that their most recent statistics show that most farm employees have become union members demanding pay scales, shorter work weeks, and fringe benefits offered to union members who work in other types of jobs.
(E - 1990 - 0)

E-39. Economic depression has encouraged a great amount of subsistence farming.
(L - 1995 - 0)

*E-42. The New York State Institute of Economics and Industrial Development released figures which show that the cost to the average New York State manufacturer for the energy necessary to maintain a minimal level of production has increased by over three hundred percent (300%) over that of 1972.
(H - 1990 - -1)

E-44. A recent study of businesses and industries relocating in those states comprising the Sun Belt reveals that almost twenty-one percent (21%) of them were previously located in New York State.
(E - 2000 - -1)

LIST OF EVENTS

ECONOMIC (con't)

E-46. Over fifty percent (50%) of the labor contracts currently in effect in both the public and private sector of the economy contain a "lifetime job security" clause.
(E - 2000 - 0)

E-51. The tender loving care necessary for running a successful farming operation was not found in the large corporate unit and therefore, many have returned to what is essentially a one-man, or family, business.
(L - 2000 - 0)

E-57. The local Chamber of Commerce announced that the number of small businesses in Central New York has declined by almost forty percent (40%) since 1977.
(E - 1995 - -1)

HEALTH

H-23. A recent study of the delivery of health care services has reported a major decline in institutionalized health care and a shift toward preventative medicine.
(E - 1990 - +2)

H-24. The President has just signed the bill recently passed by Congress into law that establishes the National Health Insurance System to cover all United States citizens.
(H - 1990 - +2)

H-25. The Syracuse area Department of Labor report on occupations and employment indicates that the number of para-medics and other "physician substitutes" equals the number of medical doctors employed in delivering primary health care.
(E - 1990 - 0)

H-27. With Alabama enacting licensing requirements yesterday, all fifty (50) states now have statutes determining entry level certification of all health service workers, including nurses, technicians, and para-medical personnel. In all occupational areas, at least a two-year college degree is required and for most occupations, a four-year degree.
(H - 1995 - +2)

LIST OF EVENTS

HEALTH (con't)

H-28. The Central New York office of a newly established Medical Information Center was opened to the public yesterday in Cortland. Its main feature is a computer library of information tied into the national medical information computer located in Washington, D. C. The center director indicated that although it will be an invaluable reference tool to the medical profession, its greatest use would be by the average citizen seeking information relative to their own health problems.
(E - 1000 - +1)

H-29. The Oswego County Health Service announced today, it has opened the first self diagnosis clinic in Central New York. Employing the latest technological equipment and advanced computer system, it can diagnose a patient's body indicators painlessly, and in minutes give the client a diagnostic printout.
(E - 2000 - 0)

H-30. With the establishment of local "environmental health monitoring" units, preventive medicine has made a great step forward, the county Health Commissioner commented yesterday. These new units will employ a large number of technically trained people in the health field.
(H - 1995 - +2)

H-32. As medical science becomes increasingly specialized, technical and expensive, more regional intensive care institutions are operating in New York with a concurrent decline in the number of general hospitals in operation.
(E - 1995 - +1)

EDUCATION/SCHOOLING

L-16. Each of the BOCES in Central New York, the City School Districts and the Community Colleges announced they had received special federal funds to employ youth and handicapped persons year round in public service type activities while they complete their schooling.
(E - 1980 - +1)

*L-21. The latest Annual Educational Summary published by the New York State Education Department shows that the number of proprietary and corporate training schools in New York State have doubled since 1975.
(E - 1995 - +1)

LIST OF EVENTS

EDUCATION/SCHOOLING (con't)

L-22. A recent study by the federal government's Office of Management and Budget reveals that the total amount of federal monies allocated to occupational education under all federal programs (i.e., CETA, VEA, voucher) has doubled since fiscal 1978.
(E - 1990 - +2)

L-23. Because of severe financial problems throughout all sectors of New York State's educational system, the Board of Regents, with the support of the state legislature, has directed that the occupational education programs of the state's BOCES and community college system be combined and placed under a single educational administrative system.
(E - 1995 - 0)

L-24. The Association of Medical Colleges most recent report indicates that the reduced job market demand for physicians and some specialists has led to a lower enrollment in graduate medical education for the past two years.
(E - 1990 - -1)

L-25. Recent statistics collected by the New York State Education Department shows that almost forty percent (40%) of all persons participating in occupational education activities within New York State, are doing so through occupational education programs offered by industries and manufacturers.
(E - 1995 - +1)

L-26. The President of the United States at a recent news conference announced that the administrative responsibility for all federal programs pertaining to vocational education will be shifted from the Department of Education to the Department of Labor and subsumed under the Department of Labor's CETA program responsibilities.
(E - 1995 - -1)

L-32. A recent survey of high school pupils across New York State revealed that over eighty percent (80%) of them spend from twenty (20) to twenty-five (25) percent of their school day engaged in some form of occupational education activity.
(E - 1990 - +2)

L-33. The latest issue of CETA News carried an article explaining that over one-third of the occupations, which in the 1970's required a high school diploma for entry, now have an associate degree as a requirement for employment.
(H - 1990 - +2)

LIST OF EVENTS

EDUCATION/SCHOOLING (con't)

L-34. The Board of Regents of New York State announced that along with teaching basic educational skills, the major educational goal of New York State schools will be the development of the attitudes and values necessary for students to become productive contributors to New York State's business, industrial, and economic climate.
(E - 1990 - +1)

L-35. A number of industries with facilities located in upstate New York have formed several consortia to operate educational facilities devoted primarily to the retraining of their employees, whose jobs have been eliminated by automation, or to the training of unemployed members of minority groups.
(E - 1990 - 0)

L-36. An analysis of the current year's enrollment in all the occupational education programs offered by educational agencies in the Central New York region shows that since 1976, the proportion of the adult population enrolled in such programs has doubled.
(H - 1990 - +2)

L-37. Both the United States Senate and House of Representatives recently passed a bill which authorizes over fifteen percent (15%) of all federal vocational education monies to be used to fund on-the-job training programs in the private job sector.
(H - 1985 - +1)

L-39. The New York State Legislature passed a law which mandates that state monies can only be used to finance vocationally related programs at both the secondary and post-secondary level which can demonstrate that at least fifty percent (50%) of the respective program's graduates secure employment in a job directly related to their training.
(E - 1990 - +1)

L-40. The Commissioner of Education in New York State in a departmental position paper took note of the fact that the number of instances statewide in which public educational agencies have entered into interagencies, cooperative agreements have decreased by over thirty percent (30%) since 1978, because of the increased competition between such agencies for the decreasing amount of state aid to education.
(E - 1990 - -1)

LIST OF EVENTS

EDUCATION/SCHOOLING (con't)

L-41. Statistics contained in a recent issue of U. S. News and World Report show that since 1978, there has been a ten percent (10%) decrease in the number of middle income families who can afford to pay the yearly cost to send their children to a four-year college or university.
(H - 1985 - 0)

L-43. The SUNY College of Agriculture at Cornell has announced that their requests from agriculturalists for research assistance has doubled since 1978 while State and Federal aid to the University is declining.
(H - 1990 - +1)

L-44. A recent New York State continuing education survey report has indicated that farmers have enrolled in unprecedented numbers in continuing education courses in the areas of business management, business law, financial planning, marketing, and business application of the consumer. They conclude that the farmer's priority need is for skills as a business manager.
(H - 1990 - +2)

L-81. Farmers must now be graduates of continuing education programs that provide advanced skills and knowledge needed to cope with the more and more complicated agri-business industry.
(E - 1995 - +2)

ENVIRONMENTAL

*N-05. Because of the increased shortage and scarcities of such resources as paper, copper, aluminum, and oil, to name a few, a number of American companies have created departments of "demarketing" whose purpose it is to discourage consumers from buying various products using such resources.
(L - 2000 - 0)

*N-16. The federal government of the United States will not grant a patent on any invention or device which is deemed to contribute to environmental pollution through either its production or use according to criteria established by the Environmental Standards Commission.
(H - 1995 - 0)

*N-18. Five northeastern states (i.e., Connecticut, Massachusetts, New Jersey, New York, and Pennsylvania) have passed laws which prohibit the use of private vehicles powered by a gasoline engine of more than 125 hp within the limits of any city having a population of 75,000 or more persons.
(E - 1995 - 0)

LIST OF EVENTS

ENVIRONMENT (con't)

N-23. The Bureau of the Interior's latest report indicates that the following natural resources have been depleted, and can no longer be feasibly mined: iron, manganese, tin, chrome, zinc, etc.
(E - 2000 - 0)

N-37. More concern relative to pollution of land and air have resulted in more environmental mandates being imposed upon agricultural operations.
(H - 1985 - +1)

N-38. Dramatic technological advances in insect and disease control have allowed control without risk of pollution.
(E - 1990 - +1)

POLITICAL/LEGAL

*P-01. The United States Congress approved and the President signed a bill which provides every American with a guaranteed annual income at the IRS determined level of sustenance, based upon the number of dependents in the family units, etc.
(E - 1990 - 0)

*P-02. The President of the United States requested in his annual "State of the Union" message that Congress pass a law limiting each employed person to holding one full-time job if the resultant salary is above a minimum level.
(N - 2000+ - 0)

*P-09. In order to lessen the increased number of persons seeking employment, the New York State Assembly passed legislation which provides a $2,000 tax credit to any family within which the wife remains a full-time homemaker.
(L - 2000 - 0)

*P-10. The Governor of New York State has signed into law a bill which allows any corporation located within the State a twenty percent (20%) tax allowance if it can demonstrate that it has increased its production by five percent (5%) or more as a result of the monies it spent to finance employee training programs.
(E - 1985 - +1)

P-14. General budget appropriations for public services by state and county governments have remained at the same level for the past two years. Increasingly, public service agencies have been using para-professionals and computer technology to meet the ever increasing public demand for services within the budget constraints.
(H - 1990 - +1)

LIST OF EVENTS

POLITICAL/LEGAL (con't)

P-15. At a recent conference of public service agency executives, the main topic was the increased accountability requirements on the agencies despite the tightened fiscal constraints they are all facing.
(H - 1980 - +2)

P-20. Although the mandates for new and expanded public services, particularly social and environmental, have been decreed by state and federal laws, the responsibility for their implementation has been decentralized to the regional and local levels.
(H - 1980 - +1)

P-22. Newly enacted federal legislation has established limits on health care services and a maximum charge allowable for these services.
(H - 1990 - +1)

P-34. A major war overseas has required the United States Department of Agriculture to make the decision to attempt to feed the world's needy at all cost, and avoid total economic chaos even if a certain percentage of the world's needy starve.
(E - 2000 - +1)

P-37. By a seven (7) to two (2) vote, the United States Supreme Court in handing down a recent decision, affirmed the principle that an employer had to hire a person applying for a job primarily on his or her individual merits in fulfilling that job, rather than on consideration of the individual's membership in an economically discriminated against minority group.
(H - 1985 - 0)

P-38. The New York State legislature has passed a law which has eliminated local financial support for public schools, and has mandated that all operating and capital revenues of such schools be supported completely through funds received from New York State.
(E - 1990 - 0)

SOCIAL

S-11. Major changes in food habits have occurred as a result of recent discoveries in nutrition research. Diets of most people have shifted toward natural food substitutes (i.e., "soy" type products are being consumed rather than red meat or fish).
(L - 2000+ - +1)

LIST OF EVENTS

SOCIAL (con't)

S-27. A recent publication of the United States Department of Labor contained statistics which showed that the percentage of employed persons sixty (60) years of age or older who annually retire has decreased by almost fifteen percent (15%) in comparison with the same figures for 1977.
(E - 1990 - 0)

S-39. The New York State Department of Labor's most recent statistics show that unlike the situation in the 1970's, there is no pay differential between a male or female employee holding comparable jobs.
(E - 1995 - +1)

S-41. Riots occur in a number of large cities in the eastern United States by young people, most of whom are college graduates and who are protesting because they cannot find a job related to their area of educational preparation.
(E - 1990 - 0)

S-42. The New York State Department of Labor's recent employment statistics show that females constitute twenty-five percent (25%) or more of all persons employed in technical occupations.
(H - 1990 - 0)

TECHNICAL

*T-04. The United States Bureau of the Census reports that almost thirty-five percent (35%) of American households own a miniaturized computer which performs such routine tasks as family record keeping, running household appliances, controlling heating sources, etc.
(H - 1995 - +1)

*T-11. At a White House Conference on Employment, an economist from a nationally known "think tank" reports that after three years of research, a study team she heads has concluded that the present rate of technological advancement is annually displacing an additional one percent (1%) of the United States work force.
(H - 1990 - 0)

T-14. The regional American Institute of Banking Director, speaking before an area wide conference of business teachers, reveals that since 1975, the number of persons employed in regional banks has declined by slightly less than thirty-seven percent (37%) due to the adoption by most banks of electronic fund transfers.
(E - 1990 - 0)

LIST OF EVENTS

TECHNICAL (con't)

T-21. The National Health Journal reported in its last issue on the large number of new and improved prosthetic devices and artificial organs developed as a result of new materials and electronic technological advances. The artirle pointed out that this rapid advancement has created a shortage of people who have the technical background to service and maintain them.
(E - 1995 - +1)

T-22. The rapid advancement of computer technology has been incorporated into the procedures of the social service agencies. Applicant eligibility determination for services, records of services and payments, and annual case evaluations are all routine matters handled by computer networks.
(H - 1985 - +1)

T-24. National Homes, Inc. latest promotional materials indicate that a small computer which can operate and regulate various building processes (i.e., heating, electricity, water, etc.), is now a standard feature on all but their most inexpensive homes.
(E - 1995 - +1)

T-26. The energy needs for both comfort and production have required farmers to shift to an alternative and inexpensive source of energy which converts animal waste into nitrogen fertilizer and a methane-like compressed gas to run cars, trucks, tractors, and other internal combustion engines.
(H - 1995 - +1)

T-28. A national well known mail-order retailer recently installed a computerized telephone order processing system in its Central New York stores which permits catalog shopping day or night, seven days a week, using the customer's own twelve (12) button Touch-Tone telephone.
(H - 1985 - +1)

T-31. The United States Department of Labor announced that the average industrial worker in the United States must be completely retrained every five (5) years because of the rapidity of technological change particularly in the area of automation and computerization.
(E - 1990 - +2)

T-35. Expanded international markets have resulted in regulations that required a complete conversion to the metric system of measurement.
(H - 1990 - +1)

LIST OF EVENTS

TECHNICAL (con't)

T-41. The National Association of Manufacturers estimates that more than thirty percent (30%) of the present positions in industry and business require some working knowledge of computers.
(A - 1990 - +2)

T-46. Almost forty-five percent (45%) of all retail merchants in the Central New York area use computer time sharing systems to maintain their inventory control.
(H - 1990 - +1)

T-82. Almost twenty percent (20%) of all residential units constructed in the greater Syracuse area uses solar energy as its heating source.
N - 2000 - +1)

T-92. The Home and Farm Building Association recently announced that contracts for installing windmill electricity generating systems in Central New York exceeded the construction industry's capability to meet. There is a one year waiting list to have one constructed.
(L - 2000 - +1)

PUBLIC/SOCIAL SERVICE

U-11. In the Syracuse Metropolitan area, the majority of people are now using mass public transit as their primary means of transportation to and from work.
(L - 1990 - +1)

U-12. A recent survey of public service agencies indicates that people in larger numbers than ever before, are requesting services previously not provided by their agency. New services requests most often encountered are: mid-career, occupational counseling; child welfare assistance, due to single parent homes; and counseling on use of leisure time.
(H - 1980 - +1)

U-17. A recent survey of the greatly expanded senior citizen population indicates a large demand for expanded social services for the elderly and the expectation that government should assist them in leading a meaningful, dignified life.
(H - 1985 - +2)

U-24. The Department of Health, Education, and Welfare announced today it had completed the regulatory guidelines for local government offices to administer the uniform National Social Welfare.
(E - 1990 - 0)

LIST OF EVENTS

PUBLIC/SOCIAL SERVICE (con't)

U-26. Since the federalization of Social Welfare, local administration offices must now hire social service workers who hold certification from H.E.W. which includes a minimum educational requirement of a master's degree in Social Welfare.
(E - 1985 - -1)

U-29. At a recent conference of social service professionals, the major topic of discussion was the shift from providing local client counseling service to cash transfer programs.
(E - 1985 - -1)

U-30. The federal office of social services has indicated that a combination of wages paid to certified professionals, the greater demand for services, and tighter budgetary constraints have led to a significant increase in the number of para-professionals working for social service agencies, both governmental and private.
(E - 1985 - +2)

VALUES/ATTITUDES

*V-03. Psychology Today, a prominent magazine, reports in a lead article on changing work values that an estimated sixty percent (60%) of the persons employed derived more satisfaction from leisure, rather than work activities.
(H - 1985 - 0)

*V-20. A series of recently conducted public opinion polls across the United States indicates that almost half of the American public rejects the notion that economic and material growth is beneficial, good for society, and an appropriate national goal for the United States.
(E - 1995 - 0)

V-21. Writing in Fortune, a professor of business administration at a large university in upstate New York indicated that since 1977, there has been an eighteen percent (18%) decline in the number of college-aged young people who are interested in managerial careers due to changing values, attitudes, and "no will to manage."
(E - 2000 - -2)

V-31. The most recent Gallup Poll noted a major shift in public support for occupational education and a concurrent decline in support for general/liberal education. Parents seem to want schooling to prepare their youngsters for securing worthwhile employment.
(H - 1985 - +2)

Appendix B

Round II Questionnaire

OCTOC DELPHI SURVEY – ROUND TWO

EVENT	PROBABILITY (A, H, E, L, N)	TIME FRAME (e.g. 1985, 90)	IMPACT (+3, +2, +1, 0, -1, -2, -3)
1. The United States Congress approved and the President signed a bill which provides every American with a guaranteed annual income at the IRS determined level of sustenance, based upon the number of dependents in the family units, etc.			
2. The President of the United States requested in his annual "State of the Union" message that Congress pass a law limiting each employed person to holding one full-time job if the resultant salary is above a minimum level.			
3. Psychology Today, a prominent magazine, reports in a lead article on changing work values that an estimated 60% of the persons employed derived more satisfaction from leisure rather than work activities.			
4. The United States Bureau of the Census reports that almost 35% of American households own a miniaturized computer which performs such routine tasks as family record keeping, running household appliances, controlling heating sources, etc.			
5. Because of the increased shortage and scarcities of such resources as paper, copper, aluminum, and oil, to name a few, a number of American companies have created departments of "demarketing" whose purpose it is to discourage consumers from buying various products using such resources.			
6. The number of jobs in New York State has declined by approximately 15% from the level of 1972.			

EVENT	PROBABILITY (A, H, E, L, N)	TIME FRAME (e.g. 1985, 90)	IMPACT (+3, +2, +1, 0, -1, -2, -3)
7. A recent New York State's Department of Labor study found that slightly over 50% of all employed persons residing in the state work approximately 30 hours per week.			
8. The New York State Commissioner of Commerce announced that capital investment by business and industries located in New York State has dropped by 40% from the level of 1970.			
9. In order to lessen the increased number of persons seeking employment, the New York State Assembly passed legislation which provides a $2,000 tax credit to any family within which the wife remains a full-time homemaker.			
10. The Governor of New York State has signed into law a bill which allows any corporation located within the State a 20% tax allowance if it can demonstrate that it has increased its production by 5% or more as a result of the monies it spent to finance employee training programs.			
11. At a White House Conference on Employment, an economist from a nationally known "think tank" reports that after three years of research, a study team she heads has concluded that the present rate of technological advancement is annually displacing an additional 1% of the United States work force.			
12. At a recent public ceremony in Albany, the Governor of New York State officially opened New York State's Employment Service state-wide computerized job-bank.			

EVENT	PROBABILITY (A, H, E, L, N)	TIME FRAME (e.g. 1985, 90)	IMPACT (+3, +2, +1, 0, -1, -2, -3)
13. A recent report by the New York State Employment Service indicates that the average hourly wage of residents of New York State is $15.00 per hour (in 1977 dollars).			
14. An official of the Social Security Administration announced that it currently does not have sufficient funds to meet its obligations to those receiving social security payments and, therefore, it is immediately suspending all benefit payments until a detailed study and recommendation has been made.			
15. The preface to the current Dictionary of Occupational Titles contains the statement that almost 30% of all job titles currently listed in the publication are new and/or emerging occupations since the last date of publication.			
16. The federal government of the United States will not grant a patent on any invention or device which is deemed to contribute to environmental pollution through either its production or use according to criteria established by the Environmental Standards Commission.			
17. The United States Census Bureau announced that the over 60-year-old segment makes up almost 1/4 of the total population with almost 90% of them receiving Social Security benefits.			
18. Five northeastern states (e.g., Connecticut, Massachusetts, New Jersey, New York, and Pennsylvania) have passed laws which prohibit the use of private vehicles powered by a gasoline engine of more than 125 hp within the limits of any city having a population of 75,000 or more persons.			

EVENT	PROBABILITY (A, H, E, L, N)	TIME FRAME (e.g. 1985, 90)	IMPACT (+3, +2, +1, 0, -1, -2, -3)
19. The United States Department of Labor's Statistical Report indicates that only 5% of the nation's labor force is employed in the production of material goods.			
20. A series of recently conducted public opinion polls across the United States indicates that almost half of the American public rejects the notion that economic and material growth is beneficial, good for society, and an appropriate national goal for the United States.			
21. A recent study by the federal government's Office of Management and Budget reveals that the total amount of federal monies allocated to occupational education under all federal programs (i.e., CETA, VEA, voucher) has doubled since fiscal 1978.			
22. The United States Department of Labor has begun to implement the amendments recently passed by the United States Congress to the Comprehensive Manpower and Full-Employment Act which call for income maintenance for persons (primarily women) who are full-time homemakers.			
23. The President of the United States at a recent news conference announced that the administrative responsibility for all federal programs pertaining to vocational education will be shifted from the Department of Education to the Department of Labor and subsumed under the DOL's CETA program responsibilities.			
24. A recent publication of the United States Department of Labor contained statistics which showed that the percentage of employed persons 60 years of age or older who annually retire has decreased by almost 15% in comparison with the same figures for 1977.			

OCTOC DELPHI SURVEY – ROUND TWO

EVENT	PROBABILITY (A, H, E, L, N)	TIME FRAME (e.g. 1985, 90)	IMPACT (+3, +2, +1, 0, -1, -2, -3)
25. The New York State Board of Regents issued a position paper jointly with New York State's Department of Labor and Department of Commerce which identifies "economic re-development" of New York State as the priority objective of occupational/technical education at all levels of the state's system of secondary and post-secondary education.			
26. Representatives from six northeastern states (i.e., New York, New Jersey, Pennsylvania, Connecticut, Massachusetts, and Rhode Island) jointly established an agency called NEEDS (Northeastern Economic Development Secretariat) to better coordinate the economic development activities within the region.			
27. A study committee of economists found that since 1978 heavy manufacturing has declined in five northeastern states (i.e., New York, New Jersey, Pennsylvania, Delaware, Massachusetts) while light manufacturing, commercial, service industries, and research/development activities have increased in economic importance within the region.			
28. The United States Department of Labor announced that the average industrial worker in the United States must be completely retrained every five years because of the rapidity of technological change particularly in the area of automation and computerization.			
29. A recent survey of high school pupils across New York State revealed that over 80% of them spend from 20 to 25 percent of their school day engaged in some form of occupational education activity.			
30. The latest issue of CETA News carried an article explaining that over one-third of the occupations which in the 1970's required a high school diploma for entry now have an associate degree as an entry level requirement for employment.			

EVENT	PROBABILITY (A, H, E, L, N)	TIME FRAME (e.g. 1985, 90)	IMPACT (+3, +2, +1, 0, -1, -2, -3)
31. By a 7 to 2 vote, the United States Supreme Court in handing down a recent decision, affirmed the principle that an employer had to hire a person applying for a job primarily on his or her individual merits in fulfilling that job rather than on consideration of the individual's membership in an economically discriminated against minority group.			
32. The New York State legislature passed a law which mandates that state monies can only be used to finance vocationally related programs at both the secondary and post-secondary level which can demonstrate that at least 50% of the respective program's graduates secure employment in a job directly related to their training.			
33. Both the United States Senate and House of Representatives recently passed a bill which authorized over 15% of all federal vocational education monies to be used to fund on-the-job training programs in the private job sector.			
34. Statistics contained in a recent issue of U.S. News and World Report show that since 1978, there has been a 10% decrease in the number of middle income families who can afford to pay the yearly cost to send their children to a four-year college or university.			
35. The New York State Department of Labor's most recent statistics show that, unlike the situation in the 1970's, there is no pay differential between a male or female employee holding comparable jobs.			
36. A number of national corporations with facilities located in upstate New York have formed a consortium to regionally operate educational facilities devoted strictly to training and retraining their employees.			

13

14

EVENT	PROBABILITY (A, H, E, L, N)	TIME FRAME (e.g. 1985, 90)	IMPACT (+3, +2, +1, 0, -1, -2, -3)
37. The New York State Department of Labor's recent employment statistics show that females constitute 25% or more of all persons employed in technical occupations.			
38. The Board of Regents of New York State announce that along with teaching the basic educational skills, the major educational goal of New York State's schools will be to develop ". . .the necessary attitudes and values to be productive contributors to the state's business, industrial and economic climate. . ."			
39. Unlike other areas of the state and northeastern United States, the in-migration into Central New York has increased by almost 20% since 1975.			
40. The New York State Institute of Economic and Industrial Development released figures which show that the cost to the average New York State manufacturer for the energy necessary to maintain a minimal level of production has increased by over 300% over the 1972 level.			
41. The National Association of Manufacturers estimates that more than 30% of the present positions in industry and business require some working knowledge of computers.			
42. A recent study of businesses and industries relocating in those states comprising the Sun Belt reveals that almost 21% of them were previously located in New York State.			

EVENT	PROBABILITY (A, H, E, L, N)	TIME FRAME (e.g. 1985, 90)	IMPACT (+3, +2, +1, 0, -1, -2, -3)
43. At a recent United States Senate hearing on the economic plight of state and local government, a member of the Office of the Budget and Management conceded that primarily because of the national shifts in population to the South and the Southwest, a state such as New Mexico received almost 20% more federal aid than does a northeastern state like New York.			
44. Over 50% of the labor contracts currently in effect in both the public and private sector of the economy contain a "lifetime job security" clause.			
45. Riots have occurred in a number of large cities in the eastern United States by young people, most of whom are college graduates, and who cannot find a job related to their area of educational preparation.			
46. The federal government of the United States will not grant a patent on any invention or device which is deemed to contribute to environmental pollution according to criteria established by the Environmental Standards Commission.			
47. Almost 45% of all retail merchants in the Central New York area use computer time sharing systems to maintain their inventory control.			
48. The regional Chambers of Commerce announced that the number of small businesses in Central New York has declined by almost 35% since 1977.			

EVENT	PROBABILITY (A, H, E, L, N)	TIME FRAME (e.g. 1985, 90)	IMPACT (+3, +2, +1, 0, -1, -2, -3)
49. Writing in Fortune, a professor of business administration at a large university in upstate New York indicated that since 1977, there has been an 18% decline in the number of college-aged young people who are interested in managerial careers due to changing values, attitudes, and "...no will to manage."			

Appendix C

Round III Questionnaire

Event	PROBABILITY			TIME FRAME			IMPACT ON EDUCATION		
	Round 2 Average	Your Rating Round 2	New Rating	Round 2 Average	Your Rating Round 2	New Rating	Round 2 Average	Your Rating Round 2	New Rating
1. The United States Congress approved and the President signed a bill which provides every American with a guaranteed annual income at the IRS determined level of sustenance, based upon the number of dependents in the family units, etc.	E			1990			0		
2. The President of the United States requested in his annual "State of the Union" message that Congress pass a law limiting each employed person to holding one full-time job if the resultant salary is above a minimum level.	L			2000+			0		
3. Psychology Today, a prominent magazine, reports in a lead article on changing work values that an estimated 60% of the persons employed derived more satisfaction from leisure rather than work activities.	H			1985			0		
4. The United States Bureau of the Census reports that almost 35% of American households own a miniaturized computer which performs such routine tasks as family record keeping, running household appliances, controlling heating sources, etc.	H			1995			+1		
5. Because of the increased shortage and scarcities of such resources as paper, copper, aluminum and oil, to name a few, a number of American companies have created departments of "demarketing" whose purpose it is to discourage consumers from buying various products using such resources.	L			2000+			0		

Event	PROBABILITY			TIME FRAME			IMPACT ON EDUCATION		
	Round 2 Average	Your Rating Round 2	New Rating	Round 2 Average	Your Rating Round 2	New Rating	Round 2 Average	Your Rating Round 2	New Rating
6. The number of jobs in New York State has declined by approximately 15% from the level of 1972.	E			1985			–1		
7. A recent New York State Department of Labor study found that slightly over 50% of all employed persons residing in the state work approximately 30 hours per week.	H			1995			+1		
8. The New York State Commissioner of Commerce announced that capital investment by business and industries located in New York State has dropped by 40% from the level of 1970.	E			1990			–2		
9. In order to lessen the increased number of persons seeking employment, the New York State Assembly passed legislation which provides a $2000 tax credit to any family within which the wife remains a full-time homemaker.	L			2000+			0		
10. The Governor of New York State has signed into law a bill which allows any corporation located within the state a 20% tax allowance if it can demonstrate that it has increased its production by 5% or more as a result of the monies it spent to finance employee training programs.	E			1985			+1		

Event	PROBABILITY			TIME FRAME			IMPACT ON EDUCATION		
	Round 2 Average	Your Rating Round 2	New Rating	Round 2 Average	Your Rating Round 2	New Rating	Round 2 Average	Your Rating Round 2	New Rating
11. At a White House Conference on Employment, an economist from a nationally known "think tank" reports that after three years of research, a study team she heads has concluded that the present rate of technological advancement is annually displacing an additional 1% of the U.S. work force.	H			1980			0		
12. At a recent public ceremony in Albany, the Governor of New York State officially opened New York State's Employment Service state-wide computerized job-bank.	H			1980			+1		
13. A recent report by the New York State Employment Service indicates that the average hourly wage of residents of New York State is $15.00 per hour (in 1977 dollars).	H			1990			0		
4. An official of the Social Security Administration announced that it currently does not have sufficient funds to meet its obligations to those receiving social security payments and, therefore, it is immediately suspending all benefit payments until a detailed study and recommendation has been made.	L			2000+			0		
15. The preface to the current Dictionary of Occupational Titles contains the statement that almost 30% of all job titles currently listed in the publication are new and/or emerging occupations since the last date of publication.	E			1985			+2		

Event	PROBABILITY			TIME FRAME			IMPACT ON EDUCATION		
	Round 2 Average	Your Rating Round 2	New Rating	Round 2 Average	Your Rating Round 2	New Rating	Round 2 Average	Your Rating Round 2	New Rating
16. The federal government of the United States will not grant a patent on any invention or device which is deemed to contribute to environmental pollution through either its production or use according to criteria established by the Environmental Standards Commission.	E			1995			0		
17. The United States Census Bureau announced that the over 80 year old segment makes up almost 1/4 of the total population with almost 90% of them receiving Social Security benefits.	H			2000			0		
18. Five northeastern states (e.g., Connecticut, Massachusetts, New Jersey, New York, and Pennsylvania) have passed laws which prohibit the use of private vehicles powered by a gasoline engine of more than 125 hp within the limits of any city having a population of 75,000 or more persons.	E			1995			0		
19. The United States Department of Labor's Statistical Report indicates that only 5% of the nation's labor force is employed in the production of material goods.	L			2000+			+1		
20. A series of recently conducted public opinion polls across the United States indicates that almost half of the American public rejects the notion that economic and material growth is beneficial, good for society, and an appropriate national goal for the United States.	E			1995			0		

Event	PROBABILITY			TIME FRAME			IMPACT ON EDUCATION		
	Round 2 Average	Your Rating Round 2	New Rating	Round 2 Average	Your Rating Round 2	New Rating	Round 2 Average	Your Rating Round 2	New Rating
21. The latest Annual Educational Summary published by the New York State Education Department shows that the number of proprietary and corporate training schools in New York State have doubled since 1975.	E			1995			+1		
22. A recent study by the federal government's Office of Management and Budget reveals that the total amount of federal monies allocated to occupational education under all federal programs (i.e., CETA, VEA, voucher) has doubled since fiscal 1978.	E			1990			+2		
23. Because of severe financial problems throughout all sectors of New York State's educational system, the Board of Regents with the support of the state legislature has directed that the occupational education programs of the state's BOCES and community college systems be combined and placed under a single educational administrative system.	E			1990			+1		
24. The United States Department of Labor has begun to implement the amendments recently passed by the United States Congress to the Comprehensive Manpower and Full-Employment Act which calls for income maintenance for persons (primarily women) who are full-time homemakers (See No. 9)	E			1995			0		
25. Recent statistics collected by the New York State Education Department shows that almost 40% of all persons participating in occupational education activities within New York State are doing so through occupational education programs offered by industries and manufacturers.	H			1995			+1		

APPENDIX D

SURVEY RESULTS
(TABLES II and III)

TABLE II

EVENTS FORECASTED BY LIKELIHOOD AND DATE OF OCCURRENCE

DATE OF OCCURRENCE	PROBABILITY OF OCCURRENCE				
	ALMOST CERTAIN (90%+)	HIGH PROBABILITY 60% TO 89%	EVEN CHANCE 40% TO 59%	LOW PROBABILITY 10% TO 39%	ALMOST NO LIKELIHOOD (10%-)
1980		P-15, P-20, U-12, A-25.	L-16.		
1985	A-26, A-28	A-04, E-18, E-21, E-28, L-37, L-41, N-37, P-37, T-22, T-28, U-17, V-03.	C-23, E-31, P-10, U-26, U-29, U-30, V-31.		
1990	E-12, T-41.	A-21, A-29, A-32, B-04, D-06, D-30, E-06, E-13, E-30, E-42, H-24, L-33, L-36, L-43, L-44, P-14, P-22, S-42, T-11, T-35, T-46.	A-23, A-40, B-25, B-41, C-27, E-08, E-29, E-34, E-36, H-23, H-25, L-22, L-24, L-32, L-34, L-35, L-39, L-40, N-38, P-01, P-38, S-27, S-41, T-14, T-31, U-24, V-48.	E-26, U-11.	
1995		D-29, E-07, H-30, N-16, T-04, T-26.	A-42, C-21, C-25, E-15, E-23, E-24, E-57, H-27, H-32, L-21, L-23, L-25, L-26, L-81, N-18, S-29, T-21, T-24, V-20.	A-33, B-13, C-14, C-26, D-09, E-39.	
2000		D-17.	D-25, E-22, E-44, E-46, H-28, H-29, N-23, P-34, V-21.	A-36, B-11, C-22, D-13, E-14, E-51, N-05, P-09, T-92.	T-82.
2000+				A-27, A-34, E-19, S-11.	A-24, P-02.

TABLE III

EVENTS FORECASTED BY IMPACT ON EDUCATION AND DATE OF OCCURRENCE

IMPACT	DATE OF OCCURRENCE					
	1980	1985	1900	1995	2000	2000+
VERY STRONG POSITIVE IMPACT (+3)						
STRONG POSITIVE IMPACT (+2)	P-15.	A-26, E-28, U-17, U-26, U-30, V-31.	A-29, H-23, H-24, L-22, L-32, L-33, L-36, L-44, T-31, T-41.	D-29, E-15, H-27, H-30, L-81.	D-25.	
MILD POSITIVE IMPACT (+1)	A-25, L-16, P-20, U-12.	A-04, A-28, C-23, L-18, L-37, N-27, P-10, T-22, T-28.	A-21, A-40, B-04, B-41, D-06, D-30, E-12, E-26, E-29, E-30, L-34, L-39, L-43, N-38, P-14, P-22, T-35, T-46, U-11.	A-33, A-42, C-25, D-09, E-07, H-32, L-21, L-25, L-39, T-04, T-21, T-24, T-26.	C-22, H-28, P-34, T-82, T-91.	A-24, A-27, A-34, E-19, S-11.
NO IMPACT (0)		E-31, L-41, P-37, V-03.	A-23, A-32, B-25, C-27, E-13, E-34, E-36, H-25, L-35, P-01, P-38, S-27, S-41, S-42, T-11, T-14. U-24, V-48.	B-13, C-14, C-26, E-24, E-39, L-23, N-16, N-18, V-20.	A-36, B-11, D-17, E-14, E-22, E-46, E-51, H-29, N-05, N-23, P-09.	P-02.
MILD NEGATIVE IMPACT (-1)		E-21, U-29.	E-42, L-24, L-40.	C-21, E-23, E-57, L-26.	D-13, E-44.	
STRONG NEGATIVE IMPACT (-2)			E-06, E-08.		V-21.	
VERY STRONG NEGATIVE IMPACT (-3)						